

photos by John McCoy

## Tennis Balls and Teamwork

### *CSUN Hosts International Robotics Championship*

(From left) Murrieta Valley High School participants Jeremy Brame, Stephen Smith and Robert Barrozo direct their robot with radio remote controllers.

Lights flashed. Music boomed. Over the din, teams of youngsters shouted in English, Chinese, Korean or Portuguese as they pitted one hand-built robot against another during the inaugural Vex Robotics World Championship held in May at the Matadome.

More than 1,000 participants, high school and middle school students, came to Northridge from throughout the United States, Brazil, Canada, China, Great Britain, Singapore, South Korea and Taipei, according to event coordinator Tarek Shraibati, a professor of manufacturing systems engineering and management in the College of Engineering and Computer Science. CSUN engineering students helped run the competition and served as interpreters.

The 91 teams, all winners of regional or national competitions, took turns competing against each other and the clock, in a game called Bridge Battle

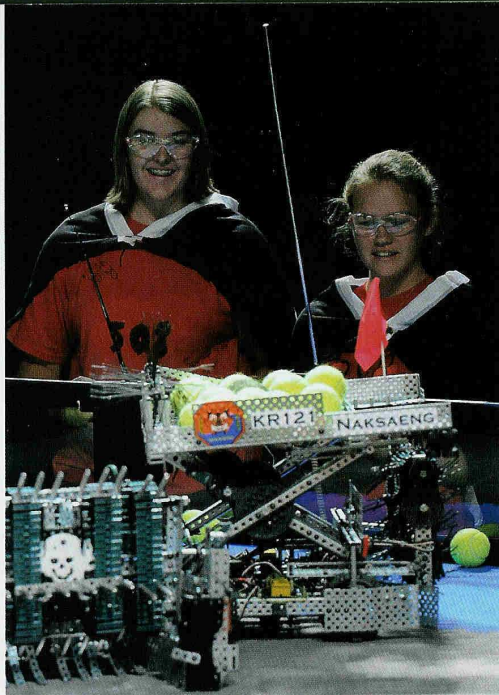
on three square battlefields, which were divided into a red and a blue section. A 20-second autonomous mode was followed by a tele-operated mode.

Working radio frequency controllers, the youngsters directed robots to pick up as many tennis balls as possible and place them in the proper section of the bridge platform within a two-minute time period.

"There are 80 balls on the field," Shraibati explained. As the teams operated their robots, he said, "They have to be able to get up above that rack to get the balls in the right color, and they have to be able to shrink down below the rack to get to the other side to get more balls."

As the clock ticked down during one round, a team from Murietta Valley High School in Riverside County managed to get about a dozen balls into the correct place, which was enough to win their heat.





(From left) Michelle Daneu and Meghan Martin from Palm Bay High School in Florida drive their robots.

"A robot was blocking us," explained Stephen Smith, 18. He and teammates Jeremy Brame, 17, and Robert Barrozo, 18, built the 15-pound contraption in a high school engineering class.

"We learned teamwork, how not to build something and how to rebuild it so it works," Smith said.

One team stood out because each member wore a long, black cape with a large image of a skull and crossbones on the back—and because two of the trio were teenage girls, a rarity throughout the entire competition.

Why don't more girls participate?

"I don't know," said Michelle Daneu, 15 and a sophomore at Palm Bay High School in Melbourne, Florida. "We like it."

"A lot," added teammate Meghan Martin, 16.

Along with Cody Smith, also 16, they built and tested their robot in a week.

"We were very, very rushed. We worked very fast," Smith said, explaining that they had just finished competing in a national competition for a different type of robot.

Like other groups, they learned skills specific to robots and how to work together. And, Daneu said, "We learned basic engineering skills."

That's important to CSUN's Shraibati.

"In the United States, by the year 2015, we expect to be 1 million engineers short in this country. We turn out 60,000 a year. That's the same as Italy. We need to get kids turned on to this kind of stuff. If you look around here, you see these kids are enthusiastic. They are involved," he said.

"The kids are learning math and science whether they know it or not," Shraibati added. "They learn how to manage projects," problem-solve and other skills "that go beyond tinkering." To encourage more youngsters to become engineers, he runs a robotics



(From left) CSUN student Felicia Chen interprets for Tao Jian Xin, and his students Wang Wei and Xuxiao Ya, who have traveled from China.

course for local high school students. He did not have a team in the Vex world championship, which he helped organize, and hosted.

As the professor surveyed the fast-paced action, Andrew Freesh, a freshman in CSUN's engineering college, managed a heat in the center of the Matadome. In the next field, a team of 10-year-olds from China finished their competition.

"When the machine is getting the balls, dropping the balls and throwing the balls, that's really interesting," said Xuxiao Ya, the only girl on the team, as CSUN engineering student Felicia Chen translated. Originally from Singapore, Chen is a senior.

Ya's teammate Wang Wei said through the interpreter that they built their robot in two days, but needed a month "to adjust and improve it."

From this competition, Wu Chen Ju, the third member of the team from Chongqing, told the interpreter they learned that they "have to be serious and concentrate."

While that team, one of the youngest in the Matadome, did not take the top prize, an alliance of three Chinese teams made up of high school students from Mianyang and middle school students from Chengdu won the world championship. ■

Future engineers participated in the Robotics World Championship 2008 at the CSUN Matadome last May.

